

# Linear Thermal Transmittance ( $\Psi$ ) and Temperature Factor ( $f$ )

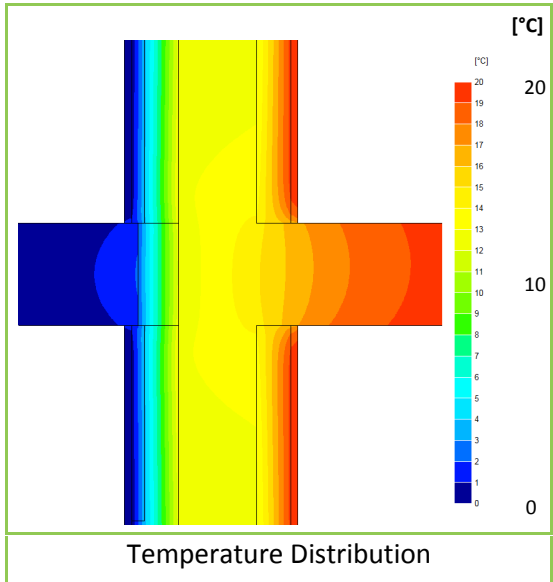
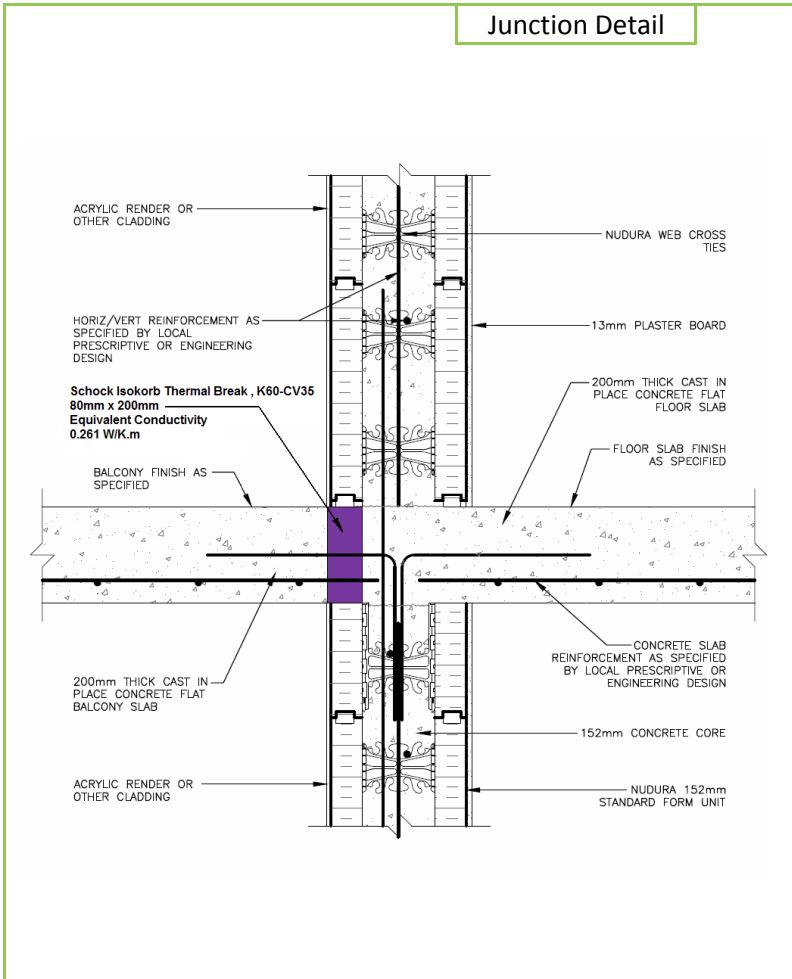
<b>Certificate No:</b>	<b>C4TM – 001427 vs. 0</b>	<b>Issued:</b>	<b>Thursday 30 May 2013</b>
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<b>General Construction Specification:</b> (see detail below for full construction)	Main/Load Bearing::	152mm (nominal) Dense Concrete Core, $\lambda <= 2.00$
	Insulation:	2x 67mm layers of EPS + exterior extra 25mm, $\lambda = 0.036$
	Balcony:	Cast-in-situ and continuous with internal floor
	Thermal Break:	80mm in line with external insulation, equivalent $\lambda = 0.261$ W/K.m
<b>Description:</b>	<b>ICF Wall, Balcony_TBreak</b>	
<b>Reference:</b>	<b>E8</b>	<b>Balcony, within dwelling, with thermal break + 25mm extra EPS</b>



Linear Thermal Transmittance W/m.K	
$\Psi =$	<b>0.344</b>

Temperature Factor <sup>3</sup> for Humidity and Mould	
$f =$	<b>0.838</b>

Calculation Prepared By: **Matthew Wright MA Physics (Oxon) PGCE**

**Notes:** Calculation based upon internal heat loss areas, applicable in UK Building Regulations and SAP calculations.  
The Schöck Isokorb concrete/concrete balcony thermal break has been used. Representative worst case fixing chosen, implying balcony not to exceed 2.25m / maximum penetrating steel bars K60-CV35 fixing pattern, fire rating F90. Refer to Schöck Isokorb Technical Manual, equivalent conductivity tables.

- $\Psi$  and  $f$  are only valid for the detail drawn and described above.
- The  $\Psi$  and  $f$  quoted are considered valid for U-value(s)  $Wall \leq 0.21$  W/m<sup>2</sup>.K, (allowance of +/- 20%, following the present guidance from B. Anderson, BRE, correspondence dated 24/02/2012, for the UK market). The use of different claddings may affect the U-value slightly, but will have no material impact on the calculated values used here, in this case.
- In dwellings, UK regulations stipulate that a temperature factor  $f$  that is  $>0.75$  would avoid the risk of mould growth. For other nations, jurisdictions and climates, please consult the local building regulations that apply for avoiding mould and condensation. (For example, typical requirements may be: Netherlands: 0.65; Switzerland: 0.75; Belgium: 0.7; Germany: 0.7; Finland: 0.87. French, German and other standards often do not indicate a single number for acceptable risk, but are dependent on circumstances.)
- Calculations have been performed in accordance with:
  - EN ISO 10211\_2007 (British Standards)
  - IP 1/06 & BR497 (BRE Press)
 and with reference to the following publications:  
**EN ISO 6946 (British Standards)**  
**BR443 (BRE Press)**